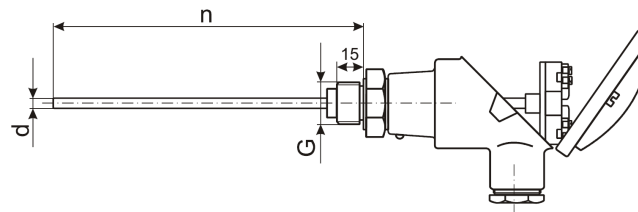
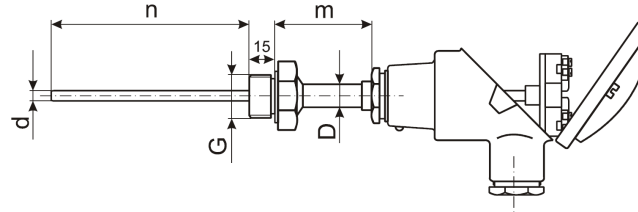
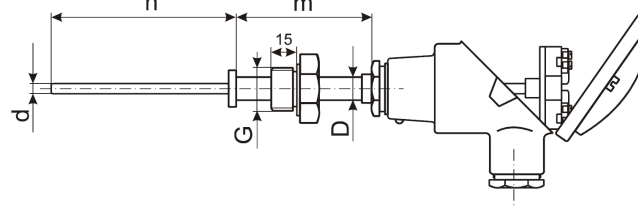
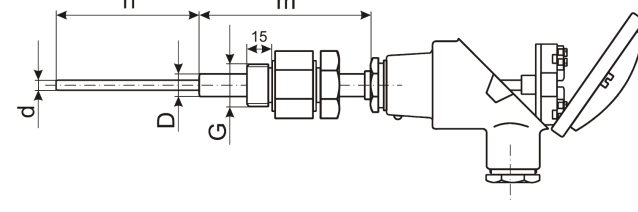
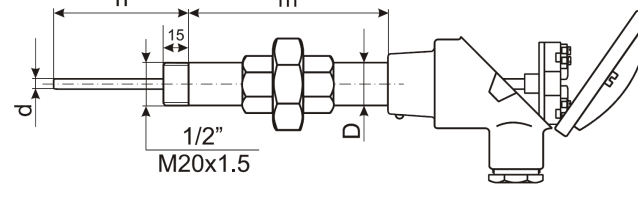
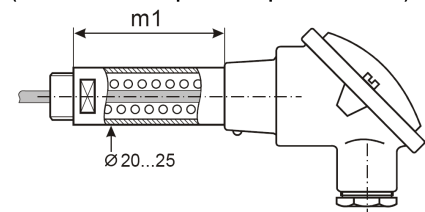


TERMOUPLU tip TSDS

T/C PROBE WITH PROTECTION HEAD AND OPEN REPLACEABLE INSERT FOR THERMOWELL OR PROTECTION TUBE (FOR IN-HEAD TRANSMITTER)*** DSx (TSDSx) ODSx (TSODSx) Sheath - stainless steel (see Appendix - Sheath materials) Head - aluminum, stainless steel, or plastic (see Appendix - Protection heads)	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS			
			D [mm]	d [mm]	wires	
DESIGN WITHOUT EXTENSION (DS) 	MI Thermocouple Insert Design					
EXTENDED DESIGN WITH WELDED CONNECTION (DS1) 	1 x J	T4	0...800 °C	8,10,12,14	3, 4.5, 6, 8	2
EXTENDED DESIGN WITH MOVABLE CONNECTION (DS2) 	2 x J					2x2
DESIGN WITH SLIDING GLAND-TYPE CONNECTION (DS4) 	1 x K	T3	0...850 °C	8,10,12,14	3, 4.5, 6, 8	2
DESIGN WITH NIPPLE-UNION-NIPPLE CONNECTION (DS5) 	1 x N, 1 x E	T16	0...1100 °C			2
	2 x K	T6*	0...1150 °C			2x2
	2 x N, 2 x E	T6*	0...1250 °C			
	1 x S, 1 x R	T16	0...1100 °C	8,10,12,14	3, 4.5, 6	2
	2 x S, 2 x R	T6*	0...1150 °C			
		T16	0...1100 °C	8,10,12,14	3, 4.5, 6	2x2
		T6*	0...1150 °C			
		T14**	0...1600 °C			
		T15**	0...1700 °C			
	Protection head: B, MA, MB, G, N, Dx, Ex, EX (see Appendix - Protection heads)					
	Process connection 'G' (nipple or union nut): - M16x1.5(Q0), M18x1.5(Q1), M20x1.5(Q2), M27x2(Q5), M33x2(Q25) - 3/8"(Q3/Q9), 1/2"(Q4/Q10), 3/4"(Q6/Q11), 1"(Q12/Q15) - welded flange					
	Thermal isolation between nipple and metal head: (for TS(O)DS only)					
	Protection head	Length 'n'	Maximum temperature	Insulation material		
	MA, MB	up to 50 mm	200 °C	POM		
	B	up to 100 mm	400 °C	Teflon®		
	other	up to 150 mm				
	Insertion length (must fit thermowell / protection tube length 'L!'): n = 50...2000 mm					
	Extension length: m = 50...1000 mm (w/o spring-loaded adapter) m = m1...1000 mm (w/ spring-loaded adapter)					
	Tip shape (hot junction design): standard (isolated), grounded, open-tube, exposed (see Appendix - Tip shapes)					
	Process pressure: - with metal thermowell up to 500 bar (see Accessories - Thermowells) - with ceramic protection tube (see Accessories - Protection tubes) *					
	Sheath material: 1.4301(M1) or 1.4541(M2)					
	MI-insert sheath material: 1.4404(M9), 1.4541(M2), 1.4571(M3), 1.4762(M4), 1.4841(M5), 1.4876(M7), 2.4816(M8)					
	Accuracy class: '1' or '2' (see Appendix - T/C Tolerance)					
	Spring-loaded adapter: (mounted between probe and protection head)					
						
	m1 = 60...100 mm					
	* Please contact ** With ceramic protection tubes only! *** Order transmitter separately!!!					

Ordering code TS*(1,2,4,5) - G0.G1G2.G3.G4.G6.G7.G9'9".G10.G11.G14 - #1.#2

Code	Feature or option	Code values
*	Base model variant	DS - standard (w/ terminal block), ODS - prepared for in-head transmitter (w/o terminal block)
G0	Protection head	B - type "B", MA - type "MA", MB - type "MB", G - IP65, type "G", N - type "N", D - type "D", DW - windowed, type "DW", DH - w/ high cap, type "DH", DHW - windowed, type "DHW", E - IP65, type "E", ES - stainless-steel, type "ES", EG - IP68 ATEX-approved Ex 'd', type "EG", EGS - IP66 ATEX-approved Ex 'd', type "EGS", EGW - windowed ATEX-approved Ex 'd', type "EGW", EX - explosion-proof instrument housing (specify!)
G1	Number of thermocouples	1 or 2
G2	Thermocouple	J - type "J", K - type "K", N - type "N", E - type "E", L - type "L", S - type "S", R - type "R"
G3	Temperature range	T3 - 0...850 °C, T4 - 0...800 °C, T6 - 0...1200 °C ⁽⁹⁾ , T13 - 0...1000 °C, T14 - 0...1600 °C, T15 - 0...1700 °C, T16 - 0...1100 °C
G4	Diameters 'D/d' [mm] ⁽¹⁾	8/3 , 10/3 , 8/4.5 , 10/4.5 , 12/6 , 14/6 , 20/6 ⁽²⁾ , 21/6 , 20/8 ⁽²⁾ , 21/8
G6	Probe length 'n' [mm]	50...2000
G7	Probe length 'm' [mm] ⁽³⁾	50...1000 (m1...1000 with 'OA' option)
G9'	Mounting connection	X - no mounting appliances, Q0 - M16x1.5, Q1 - M18x1.5, Q2 - M20x1.5, Q3 - G3/8", Q4 - G1/2", Q5 - M27x2, Q6 - G3/4", Q9 - 3/8" NPT, Q10 - 1/2" NPT, Q11 - 3/4" NPT, Q12 - G1", Q15 - 1" NPT, Q25 - M33x2, Uxx - union nut (xx - same as for Qxx), F - flange (specify!), Z - other connection (specify!)
G9"	Compression fitting ferrule ⁽⁴⁾	TF - Teflon®, BR - brass, SS - stainless steel
G10	Insert sheath material	M2 - 1.4541, M3 - 1.4571, M4 - 1.4762, M5 - 1.4841, M6 - 1.4845, M8 - 2.4816, M9 - 1.4404
G11	Accuracy class	1 - '1' ⁽⁹⁾ , 2 - '2'
G14	Insert tip shape (hot junction)	X - standard (isolated from sheath), G - grounded, E - exposed hot junction, O - open-tube design
#1	Options	X - none, OV - vibration proof (secured screws) ⁽⁵⁾ , OS - spring-loaded insert, OT - thermal isolation ⁽⁶⁾ , OA - spring-loaded adapter ⁽⁷⁾ , OP - electrochemically polished sheath surface
#2	Local indicator	X - none, A - local indicator mounted ⁽⁸⁾

⁽¹⁾ Only 'd' for TS(O)DS!

⁽²⁾ Not available with G10='M6'

⁽³⁾ Omit for TS(O)DS without 'OA' option!

⁽⁴⁾ Only for TS(O)DS4!

⁽⁵⁾ Requires 'OS' option!

⁽⁶⁾ Only for TS(O)DS!

⁽⁷⁾ Only for TS(O)DS, TS(O)DS1, and TS(O)DS5! Insert is not replaceable!

⁽⁸⁾ With windowed head only! See indicator datasheets and order separately!

⁽⁹⁾ Contact

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